10/083,474

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*** YOU HAVE NEW MAIL ***

=> s oligonucleotides and dioxetane (3a) precursor?
L1            9 OLIGONUCLEOTIDES AND DIOXETANE (3A) PRECURSOR?

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2            9 DUP REM L1 (0 DUPLICATES REMOVED)

=> d l2 bib abs 1-9

L2   ANSWER 1 OF 9  WPIDS  COPYRIGHT 2005 THE THOMSON CORP on STN
AN   2004-156552 [15]    WPIDS
DNN  N2004-125252        DNC C2004-062219
TI   Detecting an analyte in a sample by exciting sensitizer label on analyte,
     permitting energy transfer to acceptor, reacting with chemiluminescent
     precursor, and correlating the signal obtained with the presence or
     absence of the analyte.
DC   B04 D16 S03
IN   LEVISON, D W; LEVISON, S; MOLLER, U; LEVISON, D W K
PA   (EMPB-N) EMP BIOTECH GMBH
CYC  103
PI   WO 2004008122   A1 20040122 (200415)* EN   46
        RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS
            LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
         W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
            DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
            KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT
            RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA
            ZM ZW
     US 2004014043   A1 20040122 (200416)
     AU 2003258990   A1 20040202 (200450)
     EP 1523668      A1 20050420 (200527)  EN
         R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV
            MC MK NL PT RO SE SI SK TR
ADT  WO 2004008122 A1 WO 2003-US20988 20030703; US 2004014043 A1 US 2002-197288
     20020716; AU 2003258990 A1 AU 2003-258990 20030703; EP 1523668 A1 EP
     2003-764344 20030703, WO 2003-US20988 20030703
FDT  AU 2003258990 A1 Based on WO 2004008122; EP 1523668 A1 Based on WO
     2004008122
PRAI US 2002-197288       20020716
AN   2004-156552 [15]    WPIDS
AB   WO2004008122 A UPAB: 20040302
     NOVELTY - Detecting (M1) an analyte in a sample comprises exciting a
     sensitizer label on the sample, allowing energy transfer to an acceptor,
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reacting the excited acceptor with a chemiluminescent precursor to form a chemiluminescent compound emitting light in response to an activation source, exposing the compound to an activating source, and correlating the signal detected with the presence or absence of the analyte.

DETAILED DESCRIPTION - Detecting (M1) an analyte in a sample comprises exciting a sensitizer label on the sample, allowing energy transfer to an acceptor so that the sensitizer returns to an unexcited state, reacting the excited acceptor with a chemiluminescent precursor to form a chemiluminescent compound emitting light in response to an activation source, exposing the compound to an activating source, and correlating the signal detected with the presence or absence of the analyte.

INDEPENDENT CLAIMS are also included for:

(1) detecting (M2) a specific nucleotide sequence in a polynucleotide analyte comprising:

(a) providing a sensitizer-labeled analyte;

(b) providing the specific sequence on a carrier;

(c) hybridizing the labeled analyte to the specific sequence to form a hybridization complex;

(d) exposing the hybridization complex to light of an appropriate wavelength to electronically excite the sensitizer;

(e) permitting energy from the excited sensitizer label to be transferred to an excite an acceptor molecule, so that the sensitizer label returns to an unexcited state;

(f) reacting the excited acceptor molecule with a chemiluminescent precursor to form a chemiluminescent compound which emits light in response to an activation source;

(g) exposing the chemiluminescent compound to the activating source to produce a detectable signal;

(h) detecting the signal and correlating the signal with the presence or absence of the analyte in the sample;

(2) a system (I) for detecting an analyte comprising an analyte labeled with a sensitizer moiety, a chemiluminescent precursor compound capable of forming a chemiluminescent compound which emits light in response to an activation source and activating source capable of causing the chemiluminescent compound to produce a detectable signal; and

(3) a kit (II) for detecting an analyte comprising an analyte labeled with a sensitizer moiety and chemiluminescent precursor compound capable of forming a chemiluminescent compound which emits light in response to an activation source.

USE - (M1) is useful for detecting an analyte in a sample. The analyte is preferably nucleic acid and the method is useful for diagnosing (a predisposition to) a disease in a patient, where the signal obtained from a sample from a patient is compared with that from a control sample. The defect detected may be characterized by an alteration in sequence, expression, post-translation modification or a combination of these. The labeled analyte is hybridized to a carrier containing an array of **oligonucleotides** representing potential mutations in the analyte (claimed). (M1) is useful for deciphering the presence of a mutation within a given target nucleic acid sample.

ADVANTAGE - (M1) is efficient in detecting an analyte, preferably nucleic acid in a sample. (M1) is highly sensitivity and reliable in nucleic acid assays.

DESCRIPTION OF DRAWING(S) - The figure shows solid phase detection of immobilized target nucleic acid labeled with a sensitizer.

Dwg.5/7

L2 ANSWER 2 OF 9 USPATFULL on STN
AN 2004:18741 USPATFULL
TI Sensitizer-labeled analyte detection
IN Levison, Derek W.K., Jackson, NJ, UNITED STATES
Moller, Uwe, Berlin, GERMANY, FEDERAL REPUBLIC OF
Levison, Stuart, Jackson, NJ, UNITED STATES
PA emp Biotech GmbH, Berlin, GERMANY, FEDERAL REPUBLIC OF (U.S. corporation)
PI US 2004014043 A1 20040122
AI US 2002-197288 A1 20020716 (10)
DT Utility

FS APPLICATION
LREP Daniel A. Scola, Jr., HOFFMANN & BARON, LLP, 6900 Jericho Turnpike, Syosset, NY, 11791
CLMN Number of Claims: 71
ECL Exemplary Claim: 1
DRWN 7 Drawing Page(s)
LN.CNT 1240
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides methods for detecting an analyte in a sample including the steps of: (a) exciting a sensitizer label on an analyte; (b) permitting energy from the excited sensitizer label to be transferred to and excite an acceptor molecule, whereby the sensitizer label returns to an unexcited state; (c) reacting the excited acceptor molecule with a chemiluminescent precursor to form a chemiluminescent compound which emits light in response to an activation source; (d) exposing the chemiluminescent compound to the activating source to produce a detectable signal; (e) detecting the signal; and (f) correlating the signal with the presence or absence of the analyte. The chemiluminescent precursor is desirably an olefin capable of being converted to a 1,2-dioxetane. Target amplification techniques, such as PCR, may be used to directly label a target analyte with a sensitizer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 3 OF 9 USPATFULL on STN
AN 2003:234702 USPATFULL
TI Activating film for chemiluminescent assays and methods for use
IN Moller, Uwe, Berlin, GERMANY, FEDERAL REPUBLIC OF
Levison, Derek, Jackson, NJ, United States
Levison, Stuart, Jackson, NJ, United States
PA EMP Biotech GmbH, Berlin, GERMANY, FEDERAL REPUBLIC OF (non-U.S. corporation)
PI US 6613578 B1 20030902
WO 2000049406 20000824
AI US 2002-913653 20020604 (9)
WO 2000-US3863 20000216
PRAI US 1999-120125P 19990216 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Snay, Jeffrey
LREP Hoffmann & Baron, LLP
CLMN Number of Claims: 58
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 5 Drawing Page(s)
LN.CNT 790
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to chemiluminescent assays which incorporate a second film or membrane which includes a solid chemical component for activation of a stable dioxetane. Decomposition of the stable dioxetane can be accomplished using a combination of heat and chemical treatment.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 4 OF 9 USPATFULL on STN
AN 2002:198587 USPATFULL
TI Dioxetane labeled probes and detection assays employing the same
IN Bronstein, Irena, Newton, MA, UNITED STATES
Edwards, Brooks, Cambridge, MA, UNITED STATES
Martin, Christopher, Bedford, MA, UNITED STATES
Voyta, John, Sudbury, MA, UNITED STATES
PI US 2002106687 A1 20020808
AI US 2002-83474 A1 20020227 (10)
RLI Continuation of Ser. No. US 1999-340726, filed on 29 Jun 1999, PENDING Continuation of Ser. No. US 1998-18180, filed on 3 Feb 1998, GRANTED, Pat. No. US 6063574 Continuation of Ser. No. US 1996-767479, filed on 16 Dec 1996, GRANTED, Pat. No. US 5800999
DT Utility

FS APPLICATION
LREP PIPER MARBURY RUDNICK & WOLFE LLP, Supervisor, Patent Prosecution Services, 1200 Nineteenth Street, N.W., Washington, DC, 20036-2412
CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN 1 Drawing Page(s)
LN.CNT 900
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Probes labeled with 1,2-**dioxetane precursors** can be employed in a variety of assays. The probes may be nucleic acid, peptide nucleic acid, proteins including enzyme, antibody or antigen, steroid, carbohydrate, drug or non-drug hapten. The probe is provided with a 1,2-**dioxetane precursor** bound thereto, generally either covalently, or a strong ligand bond. The **dioxetane precursor** moiety is converted to a bound 1,2-dioxetane by exposure to singlet oxygen. These dioxetane (labels) either spontaneously decompose, or are induced to decompose by an appropriate trigger to release light. The trigger may be a change in pH temperature, or an agent which removes a protective group. Assay formats in which these 1,2-dioxetane labeled probes and referents may be used to include hybridization assays, immuno assays, gel-based assays and Capillary Zone Electrophoresis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 5 OF 9 USPATFULL on STN
AN 2002:238820 USPATFULL
TI Dioxetane labeled probes and detection assays employing the same
IN Bronstein, Irena, Newton, MA, United States
Edwards, Brooks, Cambridge, MA, United States
Martin, Christopher, Bedford, MA, United States
Voyta, John, Sudbury, MA, United States
PA Tropix, Inc., Bedford, MA, United States (U.S. corporation)
PI US 6451531 B1 20020917
AI US 1999-340726 19990629 (9)
RLI Continuation of Ser. No. US 1998-18180, filed on 3 Feb 1998, now patented, Pat. No. US 6063574 Continuation of Ser. No. US 1996-767479, filed on 16 Dec 1996, now patented, Pat. No. US 5800999
DT Utility
FS GRANTED
EXNAM Primary Examiner: Geist, Gary; Assistant Examiner: Owens, Jr., Howard V.
LREP Marbury, Piper, Rudnick & Wolf, LLP, Kelber, Steven B.
CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 947
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Probes labeled with 1,2-**dioxetane precursors** can be employed in a variety of assays. The probes may be nucleic acid, peptide nucleic acid, proteins including enzyme, antibody or antigen, steroid, carbohydrate, drug or non-drug hapten. The probe is provided with a 1,2-**dioxetane precursor** bound thereto, generally either covalently, or a strong ligand bond. The **dioxetane precursor** moiety is converted to a bound 1,2-dioxetane by exposure to singlet oxygen. These dioxetane (labels) either spontaneously decompose, or are induced to decompose by an appropriate trigger to release light. The trigger may be a change in pH temperature, or an agent which removes a protective group. Assay formats in which these 1,2-dioxetane labeled probes and referents may be used to include hybridization assays, immuno assays, gel-based assays and Capillary Zone Electrophoresis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 6 OF 9 USPATFULL on STN
AN 2000:61391 USPATFULL
TI Dioxetane labeled probes and detection assays employing the same
IN Bronstein, Irena, Newton, MA, United States

Edwards, Brooks, Cambridge, MA, United States
Martin, Christopher, Bedford, MA, United States
Voyta, John, Sudbury, MA, United States
PA Tropix, Inc., Bedford, MA, United States (U.S. corporation)
PI US 6063574 20000516
AI US 1998-18180 19980203 (9)
RLI Continuation of Ser. No. US 1996-767479, filed on 16 Dec 1996, now patented, Pat. No. US 5800999
DT Utility
FS Granted
EXNAM Primary Examiner: Kunz, Gary L.
LREP Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
CLMN Number of Claims: 5
ECL Exemplary Claim: 1,2
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 868
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Probes labeled with 1,2-**dioxetane precursors** can be employed in a variety of assays. The probes may be nucleic acid, peptide nucleic acid, proteins including enzyme, antibody or antigen, steroid, carbohydrate, drug or non-drug hapten. The probe is provided with a 1,2-**dioxetane precursor** bound thereto, generally either covalently, or a strong ligand bond. The **dioxetane precursor** moiety is converted to a bound 1,2-dioxetane by exposure to singlet oxygen. These dioxetane (labels) either spontaneously decompose, or are induced to decompose by an appropriate trigger to release light. The trigger may be a change in pH temperature, or an agent which removes a protective group. Assay formats in which these 1,2-dioxetane labeled probes and referents may be used to include hybridization assays, immuno assays, gel-based assays and Capillary Zone Electrophoresis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 7 OF 9 USPATFULL on STN
AN 2000:8563 USPATFULL
TI Method of detecting a substance using enzymatically-induced decomposition of dioxetanes
IN Bronstein, Irena Y., Newton, MA, United States
PA Tropix. Inc., Bedford, MA, United States (U.S. corporation)
PI US 36536 20000125
US 4978614 19901218 (Original)
AI US 1997-958342 19971027 (8)
US 1989-382125 19890720 (Original)
RLI Continuation-in-part of Ser. No. US 1988-265406, filed on 26 Oct 1988, now abandoned which is a continuation-in-part of Ser. No. US 1986-889823, filed on 24 Jul 1986, now abandoned
DT Reissue
FS Granted
EXNAM Primary Examiner: Owens, Amelia
LREP Long Aldridge & Norman LLP, Kelber, Steven B.
CLMN Number of Claims: 70
ECL Exemplary Claim: 16
DRWN 22 Drawing Figure(s); 22 Drawing Page(s)
LN.CNT 1592
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB In an assay method in which a member of a specific binding pair is detected by means of an optically detectable reaction, the improvement wherein the optically detectable reaction includes the reaction, with an enzyme, of a dioxetane having the formula ##STR1## where T is a cycloalkyl or polycycloalkyl group bonded to the 4-membered ring portion of the dioxetane by a spiro linkage; Y is a fluorescent chromophore; X is hydrogen, alkyl, aryl, aralkyl, alkaryl, heteroalkyl, heteroaryl, cycloalkyl, cycloheteroalkyl, or enzyme-cleavable group; and Z is hydrogen or an enzyme-cleavable group, provided that at least one of X or Z must be an enzyme-cleavable group, so that the enzyme cleaves the enzyme-cleavable group from the dioxetane to form a negatively charged substituent bonded to the dioxetane, the negatively charged substituent

causing the dioxetane to decompose to form a luminescent substance that includes group Y of said dioxetane.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 8 OF 9 USPATFULL on STN
AN 1998:104572 USPATFULL
TI **Dioxetane-precursor**-labeled probes and detection assays employing the same
IN Bronstein, Irena, Newton, MA, United States
Edwards, Brooks, Cambridge, MA, United States
Martin, Christopher, Bedford, MA, United States
Voyta, John, Sudbury, MA, United States
PA Tropix, Inc., Bedford, MA, United States (U.S. corporation)
PI US 5800999 19980901
AI US 1996-767479 19961216 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Kunz, Gary L.
LREP Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
CLMN Number of Claims: 11
ECL Exemplary Claim: 1,9
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 911
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Probes labeled with 1,2-**dioxetane precursors** can be employed in a variety of assays. The probes may be nucleic acid, peptide nucleic acid, proteins including enzyme, antibody or antigen, steroid, carbohydrate, drug or non-drug hapten. The probe is provided with a 1,2-**dioxetane precursor** bound thereto, generally either covalently, or a strong ligand bond. The **dioxetane precursor** moiety is converted to a bound 1,2-dioxetane by exposure to singlet oxygen. These dioxetane (labels) either spontaneously decompose, or are induced to decompose by an appropriate trigger to release light. The trigger may be a change in pH temperature, or an agent which removes a protective group. Assay formats in which these 1,2-dioxetane labeled probes and referents may be used to include hybridization assays, immuno assays, gel-based assays and Capillary Zone Electrophoresis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L2 ANSWER 9 OF 9 USPATFULL on STN
AN 90:96756 USPATFULL
TI Method of detecting a substance using enzymatically-induced decomposition of dioxetanes
IN Bronstein, Irena Y., Newton, MA, United States
PA Tropix, Inc., Bedford, MA, United States (U.S. corporation)
PI US 4978614 19901218
AI US 1989-382125 19890720 (7)
RLI Continuation-in-part of Ser. No. US 1988-265406, filed on 26 Oct 1988, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Raymond, Richard L.
LREP Lyon & Lyon
CLMN Number of Claims: 66
ECL Exemplary Claim: 1,31
DRWN 19 Drawing Figure(s); 12 Drawing Page(s)
LN.CNT 1484
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB In an assay method in which a member of a specific binding pair is detected by means of an optically detectable reaction, the improvement wherein the optically detectable reaction includes the reaction, with an enzyme, of a dioxetane having the formula ##STR1## where T is a cycloalkyl or polycycloalkyl group bonded to the 4-membered ring portion of the dioxetane by a spiro linkage; Y is a fluorescent chromophore; X is hydrogen, alkyl, aryl, aralkyl, alkaryl, heteroalkyl, heteroaryl,

cycloalkyl, cycloheteroalkyl, or enzyme-cleavable group; and Z is hydrogen or an enzyme-cleavable group, provided that at least one of X or Z must be an enzyme-cleavable group, so that the enzyme cleaves the enzyme-cleavable group from the dioxetane to form a negatively charged substituent bonded to the dioxetane, the negatively charged substituent causing the dioxetane to decompose to form a luminescent substance that includes group Y of said dioxetane.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=>

```
=> s oligonucleotide? (4a) dioxetane?
L3          12 OLIGONUCLEOTIDE? (4A) DIOXETANE?

=> s l3 not l2
L4           8 L3 NOT L2

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5           6 DUP REM L4 (2 DUPLICATES REMOVED)

=> d l5 bib abs 1-6

L5   ANSWER 1 OF 6  USPATFULL on STN
AN     1999:19356  USPATFULL
TI     1,2-dioxetane compounds as chemiluminescent labels for organic and
       biological molecules
IN     Schaap, Arthur P., Detroit, MI, United States
       Romano, Louis J., Detroit, MI, United States
       Goudar, Jaidev S., Detroit, MI, United States
PA     Board of Governors of Wayne State University, Detroit, MI, United States
       (U.S. corporation)
PI     US 5869698              19990209
AI     US 1997-910267          19970812 (8)
RLI    Division of Ser. No. US 1994-218308, filed on 25 Mar 1994 which is a
       continuation-in-part of Ser. No. US 1988-289837, filed on 27 Dec 1988,
       now patented, Pat. No. US 5616729, issued on 1 Apr 1997 which is a
       continuation-in-part of Ser. No. US 1986-887139, filed on 17 Jul 1986,
       now abandoned
DT     Utility
FS     Granted
EXNAM  Primary Examiner: Owens, Amelia
LREP   McLeod, Ian C.
CLMN   Number of Claims: 10
ECL    Exemplary Claim: 1
DRWN   5 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1054
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB     Dioxetanes which couple with organic and biological molecules of the
       formula: ##STR1## wherein X is a leaving group which is removed by an
       `activating agent to produce light, wherein A is a coupling substituent,
       Ar is a substituent selected from the group consisting of phenyl and
       naphthyl to provide a label are described. R.sub.1 is an optional linker
       substituent and can have between 1 and 30 carbon atoms with some of the
       carbon atoms being oxygen, sulfur, nitrogen or phosphorus. Ar as phenyl
       is preferred. The dioxetane coupled molecules are useful in assays of
       all types where luminescence can be used as an indicator.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5   ANSWER 2 OF 6  USPATFULL on STN
AN     1998:99003  USPATFULL
TI     Alkene intermediates for preparing 1,2-dioxetane compounds
IN     Schaap, Arthur P., Detroit, MI, United States
       Romano, Louis J., Detroit, MI, United States
PA     Board of Governors of Wayne State University, Detroit, MI, United States
       (U.S. corporation)
PI     US 5795987              19980818
AI     US 1997-910072          19970812 (8)
RLI    Division of Ser. No. US 1994-218308, filed on 25 Mar 1994 which is a
       continuation-in-part of Ser. No. US 1988-289837, filed on 27 Dec 1988,
       now patented, Pat. No. US 5616729 which is a continuation-in-part of
       Ser. No. US 1986-887139, filed on 17 Jul 1986, now abandoned
DT     Utility
FS     Granted
EXNAM  Primary Examiner: Owens, Amelia
LREP   McLeod, Ian C.
CLMN   Number of Claims: 19
```

ECL Exemplary Claim: 1
DRWN 4 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1105
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Dioxetanes which couple with organic and biological molecules of the formula: ##STR1## wherein X is a leaving group which is removed by an activating agent to produce light, wherein A is a coupling substituent, Ar is a substituent selected from the group consisting of phenyl and naphthyl to provide a label are described. R.sub.1 is an optional linker substituent and can have between 1 and 30 carbon atoms with some of the carbon atoms being oxygen, sulfur, nitrogen or phosphorus. Ar as phenyl is preferred. The dioxetane coupled molecules are useful in assays of all types where luminescence can be used as an indicator.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 3 OF 6 USPATFULL on STN
AN 1998:72765 USPATFULL
TI 1,2-Dioxetane compounds as chemiluminescent labels for organic and biological molecules
IN Schaap, Arthur P., Detroit, MI, United States
Romano, Louis J., Detroit, MI, United States
Goudar, Jaidev S., Detroit, MI, United States
PA Board of Governors of Wayne State University, Detroit, MI, United States (U.S. corporation)
PI US 5770743 19980623
AI US 1994-218308 19940325 (8)
RLI Continuation of Ser. No. US 1990-579837, filed on 7 Sep 1990, now abandoned which is a continuation-in-part of Ser. No. US 1988-289837, filed on 27 Dec 1988, now patented, Pat. No. US 5616729 which is a continuation-in-part of Ser. No. US 1986-887139, filed on 17 Jul 1986
DT Utility
FS Granted
EXNAM Primary Examiner: Owens, Amelia
LREP McLeod, Ian C.
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 983
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Dioxetanes which couple with organic and biological molecules of the formula: ##STR1## wherein X is a leaving group which is removed by an activating agent other than an enzyme which is removed by an activating agent to produce light, wherein A is a coupling substituent, Ar is a substituent selected from the group consisting of phenyl and naphthyl to provide a label are described. R.sub.1 is an optional linker substituent and can have between 1 and 30 carbon atoms with some of the carbon atoms being oxygen, sulfur, nitrogen or phosphorus. Ar as phenyl is preferred. The dioxetane coupled molecules are useful in assays of all types where luminescence can be used as an indicator.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1997:270683 CAPLUS
DN 126:247539
TI Homogeneous hybridization assay with label-specific receptors
IN Neuenhofer, Stephan; Skrzipczyk, Heinz Juergen; Madry, Norbert; Leutsch, Thomas; Kaesmarker, Reinhard; Uhlmann, Eugen
PA Behringwerke Ag, Germany
SO Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 763601	A2	19970319	EP 1996-113136	19960816

	EP 763601	A3	20020102		
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, PT, SE				
	DE 19534122	A1	19970320	DE 1995-19534122	19950914
	AU 9665600	A1	19970320	AU 1996-65600	19960912
	CA 2185516	AA	19970315	CA 1996-2185516	19960913
	US 5858668	A	19990112	US 1996-712094	19960916
	JP 09220100	A2	19970826	JP 1996-245249	19960917
PRAI	DE 1995-19534122	A	19950914		

AB The title hybridization assay comprises hybridization of the analyte nucleic acid with an analyte-specific nucleic acid which is labeled with a fluorescent, phosphorescent, chemiluminescent, bioluminescent, or electroluminescent group. Background signal is reduced by quenching the signal from non-complexed reporter groups with a reporter group-binding substance, e.g. an anti-reporter group (monoclonal) antibody.

L5 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1996:600910 CAPLUS
DN 125:266719
TI Methylene blue-oligonucleotide conjugates: synthesis and application in DNA analysis
AU Schubert, Frank; Moeller, Uwe; Cech, Dieter
CS Institut Chemie, Humboldt Universitaet Berlin, Berlin, 10099, Germany
SO Collection of Czechoslovak Chemical Communications (1996), 61(Spec. Issue), S140-S141
CODEN: CCCCAK; ISSN: 0010-0765
PB Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
DT Journal
LA English
AB A chemical amplification reaction for detection of nucleic acids is described. The method uses the photosensitizing properties of methylene blue to amplify thermally stable olefin dioxetanes by repetitions of a photochem. excitation/oxygen quenching cycle. After amplification, the dioxetanes are decomposed, with the generation of light, at extremely alkaline pH and the emissions can be detected photog. with X-ray film. Lower limits of detection of 20-mer oligonucleotide was 0.1 ng.

L5 ANSWER 6 OF 6 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
DUPLICATE 1
AN 1992:303977 BIOSIS
DN PREV199294017127; BA94:17127
TI OLIGONUCLEOTIDE FINGERPRINTING OF PLANT AND FUNGAL GENOMES A COMPARISON OF RADIOACTIVE COLORIGENIC AND CHEMILUMINESCENT DETECTION METHODS.
AU BIERWERTH S [Reprint author]; KAHL G; WEIGAND F; WEISING K
CS PFLANZLICHE MOLEKULARBIOLOGIE, BOTANISCHES INST, SIESMAYERSTR 70, W-6000 FRANKFURT AM MAIN, GERMANY
SO Electrophoresis, (1992) Vol. 13, No. 3, pp. 115-122.
CODEN: ELCTDN. ISSN: 0173-0835.
DT Article
FS BA
LA ENGLISH
ED Entered STN: 27 Jun 1992
Last Updated on STN: 27 Jun 1992
AB Digoxigenated oligonucleotide probes complementary to simple repetitive DNA sequences were introduced into nonradioactive fingerprint analysis of plant and fungal DNA. The fragment patterns, obtained by blot hybridization of TaqI-restricted DNA from chickpea (Cicer arietinum) and its fungal pathogen Ascochyta rabiei with digoxigenated probes and either a colorigenic or a chemiluminescent detection method, were compared to those obtained with 32P-labeled probes. In combination with alkaline phosphatase and its chemiluminescent substrate 3-(2'-spiroadamantane)-4-methoxy-4-(3"-phosphoryloxy)-phenyl-1,2-**dioxetane** (AMPPD) digoxigenated **oligonucleotides** yielded clear-cut fingerprints with high signal-to-background ratios within several minutes of exposure to X-ray films. The chemiluminescence reaction remained stable for at least two weeks. A comparison of banding patterns obtained by radioactive versus digoxigenin-based hybridization and detection techniques revealed substantial differences in the relative signal intensities of bands. Both

nonradioactive techniques show a tendency to "equalize" band intensity differences. Whereas 32P-labeled oligonucleotides are also applicable to in situ hybridization with DNA immobilized in dried agarose gels, gel hybridization did not work efficiently with digoxigenated probes and either substrate.

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=> s dioxetane precursor? (4a) oligonucleotide?
L10          4 DIOXETANE PRECURSOR? (4A) OLIGONUCLEOTIDE?

=> d l10 bib abs 1-4

L10  ANSWER 1 OF 4  USPATFULL on STN
AN      2002:238820  USPATFULL
TI      Dioxetane labeled probes and detection assays employing the same
IN      Bronstein, Irena, Newton, MA, United States
        Edwards, Brooks, Cambridge, MA, United States
        Martin, Christopher, Bedford, MA, United States
        Voyta, John, Sudbury, MA, United States
PA      Tropix, Inc., Bedford, MA, United States (U.S. corporation)
PI      US 6451531          B1   20020917
AI      US 1999-340726           19990629 (9)
RLI     Continuation of Ser. No. US 1998-18180, filed on 3 Feb 1998, now
        patented, Pat. No. US 6063574 Continuation of Ser. No. US 1996-767479,
        filed on 16 Dec 1996, now patented, Pat. No. US 5800999
DT      Utility
FS      GRANTED
EXNAM   Primary Examiner: Geist, Gary; Assistant Examiner: Owens, Jr., Howard V.
LREP    Marbury, Piper, Rudnick & Wolf, LLP, Kelber, Steven B.
CLMN    Number of Claims: 6
ECL     Exemplary Claim: 1
DRWN    1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 947
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB      Probes labeled with 1,2-dioxetane precursors can be employed in a
        variety of assays. The probes may be nucleic acid, peptide nucleic acid,
        proteins including enzyme, antibody or antigen, steroid, carbohydrate,
        drug or non-drug hapten. The probe is provided with a 1,2-dioxetane
        precursor bound thereto, generally either covalently, or a strong ligand
        bond. The dioxetane precursor moiety is converted to a bound
        1,2-dioxetane by exposure to singlet oxygen. These dioxetane (labels)
        either spontaneously decompose, or are induced to decompose by an
        appropriate trigger to release light. The trigger may be a change in pH
        temperature, or an agent which removes a protective group. Assay formats
        in which these 1,2-dioxetane labeled probes and referents may be used to
        include hybridization assays, immuno assays, gel-based assays and
        Capillary Zone Electrophoresis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10  ANSWER 2 OF 4  USPATFULL on STN
AN      2002:198587  USPATFULL
TI      Dioxetane labeled probes and detection assays employing the same
IN      Bronstein, Irena, Newton, MA, UNITED STATES
        Edwards, Brooks, Cambridge, MA, UNITED STATES
        Martin, Christopher, Bedford, MA, UNITED STATES
        Voyta, John, Sudbury, MA, UNITED STATES
PI      US 2002106687       A1   20020808
AI      US 2002-83474       A1   20020227 (10)
RLI     Continuation of Ser. No. US 1999-340726, filed on 29 Jun 1999, PENDING
        Continuation of Ser. No. US 1998-18180, filed on 3 Feb 1998, GRANTED,
        Pat. No. US 6063574 Continuation of Ser. No. US 1996-767479, filed on 16
        Dec 1996, GRANTED, Pat. No. US 5800999
DT      Utility
FS      APPLICATION
LREP    PIPER MARBURY RUDNICK & WOLFE LLP, Supervisor, Patent Prosecution
        Services, 1200 Nineteenth Street, N.W., Washington, DC, 20036-2412
CLMN    Number of Claims: 6
ECL     Exemplary Claim: 1
DRWN    1 Drawing Page(s)
LN.CNT 900
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB      Probes labeled with 1,2-dioxetane precursors can be employed in a
        variety of assays. The probes may be nucleic acid, peptide nucleic acid,
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proteins including enzyme, antibody or antigen, steroid, carbohydrate, drug or non-drug hapten. The probe is provided with a 1,2-dioxetane precursor bound thereto, generally either covalently, or a strong ligand bond. The dioxetane precursor moiety is converted to a bound 1,2-dioxetane by exposure to singlet oxygen. These dioxetane (labels) either spontaneously decompose, or are induced to decompose by an appropriate trigger to release light. The trigger may be a change in pH temperature, or an agent which removes a protective group. Assay formats in which these 1,2-dioxetane labeled probes and referents may be used to include hybridization assays, immuno assays, gel-based assays and Capillary Zone Electrophoresis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 3 OF 4 USPATFULL on STN
AN 2000:61391 USPATFULL
TI Dioxetane labeled probes and detection assays employing the same
IN Bronstein, Irena, Newton, MA, United States
Edwards, Brooks, Cambridge, MA, United States
Martin, Christopher, Bedford, MA, United States
Voyta, John, Sudbury, MA, United States
PA Tropix, Inc., Bedford, MA, United States (U.S. corporation)
PI US 6063574 20000516
AI US 1998-18180 19980203 (9)
RLI Continuation of Ser. No. US 1996-767479, filed on 16 Dec 1996, now patented, Pat. No. US 5800999
DT Utility
FS Granted
EXNAM Primary Examiner: Kunz, Gary L.
LREP Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
CLMN Number of Claims: 5
ECL Exemplary Claim: 1,2
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 868
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Probes labeled with 1,2-dioxetane precursors can be employed in a variety of assays. The probes may be nucleic acid, peptide nucleic acid, proteins including enzyme, antibody or antigen, steroid, carbohydrate, drug or non-drug hapten. The probe is provided with a 1,2-dioxetane precursor bound thereto, generally either covalently, or a strong ligand bond. The dioxetane precursor moiety is converted to a bound 1,2-dioxetane by exposure to singlet oxygen. These dioxetane (labels) either spontaneously decompose, or are induced to decompose by an appropriate trigger to release light. The trigger may be a change in pH temperature, or an agent which removes a protective group. Assay formats in which these 1,2-dioxetane labeled probes and referents may be used to include hybridization assays, immuno assays, gel-based assays and Capillary Zone Electrophoresis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 4 OF 4 USPATFULL on STN
AN 1998:104572 USPATFULL
TI Dioxetane-precursor-labeled probes and detection assays employing the same
IN Bronstein, Irena, Newton, MA, United States
Edwards, Brooks, Cambridge, MA, United States
Martin, Christopher, Bedford, MA, United States
Voyta, John, Sudbury, MA, United States
PA Tropix, Inc., Bedford, MA, United States (U.S. corporation)
PI US 5800999 19980901
AI US 1996-767479 19961216 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Kunz, Gary L.
LREP Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
CLMN Number of Claims: 11
ECL Exemplary Claim: 1,9

DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 911
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Probes labeled with 1,2-dioxetane precursors can be employed in a variety of assays. The probes may be nucleic acid, peptide nucleic acid, proteins including enzyme, antibody or antigen, steroid, carbohydrate, drug or non-drug hapten. The probe is provided with a 1,2-dioxetane precursor bound thereto, generally either covalently, or a strong ligand bond. The dioxetane precursor moiety is converted to a bound 1,2-dioxetane by exposure to singlet oxygen. These dioxetane (labels) either spontaneously decompose, or are induced to decompose by an appropriate trigger to release light. The trigger may be a change in pH temperature, or an agent which removes a protective group. Assay formats in which these 1,2-dioxetane labeled probes and referents may be used to include hybridization assays, immuno assays, gel-based assays and Capillary Zone Electrophoresis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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